UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/779,071	02/07/2001	Eric Sven-Johan Swildens	UDN0005	4392

29989 7590 02/15/2005		

HICKMAN PALERMO TRUONG & BECKER, LLP
2055 GATEWAY PLACE
SUITE 550
SAN JOSE, CA 95110

EXAMINER
PATEL, HARESH N

ART UNIT	PAPER NUMBER
2154	

DATE MAILED: 02/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/779,071	SWILDENS, ERIC SVEN-JOHAN
	Examiner	Art Unit	
	Haresh Patel	2154	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>13 September 2004</u>.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is

closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-30</u> is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-30</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☐ All b)☐ Some * c)☐ None of:

   1.☐ Certified copies of the priority documents have been received.

   2.☐ Certified copies of the priority documents have been received in Application No. _____.

   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage

      application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
   Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1.   Claims 1-30 are presented for examination.

Response to Arguments

2.   Applicant's arguments filed 9/13/2004 have been fully considered but they are not

persuasive. Therefore, rejection of claims 1-30 is maintained.

Applicant argues, (1) "In making this amendment, Applicant has not and does not in any

way narrow the scope of protection to which Applicant considers the invention herein to be

entitled and does not concede, in any way, that the subject matter of such Claims was in fact

taught or disclosed by the cited prior art". The examiner disagrees in response to applicant's

arguments. Claims 1 and 16 are amended, dated 9/13/2004, containing additional limitations,

"all request packets from clients destined for the load balancing array", etc. Original claims, 1

and 16, did not contain additional limitations, for example, multiple clients, multiple request

packets etc. The limitations, "all request packets from clients destined for the load balancing

array", etc, has been newly added, which is addressed by the new ground(s) of rejection (please

refer to the below rejections of this office action), necessitated by the applicant's amendment.

Therefore, the rejection is maintained.

Applicant argues, (2) "Zisapel-Radware et al., US Publication, 2002/0103846 A1, "Load

Balancing", Aug. 1, 2002, Radware Limited (Hereinafter Zisapel-Radware) does not teach or

disclose a system wherein all request packets from clients destined for the load balancing array

are routed through a scheduler as claimed in Claims 1 and 16. Anticipation under 35 U.S.C. 102

requires a reference to teach or disclose each and every element, limitation, or step of a claim.

Since Claim 1 and Claim 16 each include at least one element not found in Zisapel-Radware, the

Zisapel-Radware patent does not anticipate Claim 1 or Claim 16 under 35 U.S.C. 102. Zisapel-

Radware therefore does not teach every aspect of the claimed invention either explicitly or

impliedly". The examiner disagrees in response to applicant's arguments. The limitations, "all

request packets from clients destined for the load balancing array are routed through a

scheduler", etc, has been newly added, which is addressed by the new ground(s) of rejection

(please refer to the below rejections of this office action), necessitated by the applicant's

amendment. Therefore, the rejection is maintained.

Applicant states, (3) "The Office Action rejected Claims 3, 4, 13, 18, 19, 28, under 35

U.S.C. 103(a). Applicant respectfully requests that the Examiner provide evidence of the

Official Notice claimed limitations in the Office Action". In response to this applicant's request,

for example, Coile et al., 6,108,300 (Hereinafter Coile) teaches limitations, "detecting the failure

of the server and electing one of said load balancing servers as the new server (e.g., col., 5, lines

3 – 24, e.g., col., 6, lines 40 – 62, col., 8, lines 2 – 28)", "server detecting the failure of other load

balancing servers (e.g., col., 12, lines 35 - 54, col., 6, lines 40 – 62, col., 8, lines 2 – 28)" and

"the server stops routing packets to any failed load balancing servers/back end Web servers (e.g.,

col., 12, lines 35 - 54, e.g., col., 6, lines 40 – 62, col., 8, lines 2 – 28)". The motivation would be

obvious because with the Coile's teachings, upon failure of the scheduler, another load balancing

server can take over scheduling task to assign servers for the client requests. The other load

balancing server will then receive the client requests for processing, i.e., schedule them

according the scheduling algorithm. By discontinuing to route packets to any failed server

would help prevent packets loss. Therefore, the rejection is maintained.

Applicant states, (4) "The Office Action rejected Claims 5, 6, 14, 15, 20, 21, 29 and 30

under 35 U.S.C. 103(a). Applicant respectfully requests that the Examiner provide evidence of

the Official Notice claimed limitations in the Office Action". In response to this applicant's

request, for example, Masters 6,374,300 (Hereinafter Masters) clearly teaches limitations,

"server scheduling sessions to servers based on a cookie or session ID (e.g., abstract, col., 10,

lines 8 – 61), use of cookie injection to map a client to a specific server (e.g., abstract, col., 10,

lines 8 - 61, col., 13, lines 1- 24), modify URLs in the HTML page in a packet to serve them

from said content delivery network (e.g., col., 5, lines14 – 61, col., 3, lines 21 - 50), HTML

pages that have modified URLs are cached to improve performance (e.g., abstract, col., 10, lines

8 - 61, col., 2, lines 24 – 64, col., 7, lines 1 - 16)". The motivation would be obvious because the

Masters teachings would help use of the cookie for the client request so that the client request

can be routed to a previously selected destination web server associated with the client. The

client will be able to continue using the same web server support. As per Masters teachings, the

cookie information can be manipulated as necessary. Hence, the client will be able to continue

communicating with the server in a direct persistent manner.

Applicant states, (5) "The Office Action rejected Claims 7, 8, 22 and 23 under 35 U.S.C.

103(a). Applicant respectfully requests that the Examiner provide evidence of the Official

Notice claimed limitations in the Office Action". In response to this applicant's request, for

example, Hankinson et al., 6,799,202 (Hereinafter Hankinson) teaches limitations, "server

decrypting and encrypting packet for SSL session (e.g., col., 3, lines 2 – 65)". The motivation

would be obvious because with the Hankinson's teachings, the scheduler server can decrypt or

encrypt packets to support SSL session. Using SSL session client information would be handled in a secure manner. Therefore, the rejection is maintained.

Applicant states, (6) "The Office Action rejected Claims 9-12, 24-27 under 35 U.S.C. 103(a). Applicant respectfully requests that the Examiner provide evidence of the Official Notice claimed limitations in the Office Action". In response to this applicant's request, for example, Masters clearly teaches limitations, "URL based scheduling of packets (e.g., col., 5, lines 18 – 65), persistent connections in all its paths when required (e.g., col., 5, lines 22 – 59, col., 6, lines 8 - 31) and the load balancing server performing hash scheduling of packets (e.g., col., 15, lines 45 – col., 16, lines 21) and uses hash group based persistence to maintain its persistence tables (e.g., col., 5, lines 22 – 59, col., 15, line 57 – col., 16, line 24)". The motivation would be obvious because Masters teachings of cookie and persistence connections usage would help facilitate secure communication between the client and the Web server. The URL information in the https packet would provide information of the resource, which the client needs to access. The scheduling with hashing of packets will provide direct secure communication between the web server and the client.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

3.   Amended claims 1, 7-9, 16, 22-24, are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4.   Amended claims 1 and 16, recite the limitations, "packet directly to <u>said</u> client", "<u>the</u> load balancing", "load balances <u>said</u> request packet", "response packet to <u>said</u> request packet". There is insufficient antecedent basis for this limitation in the claim. Due to amendment to the claims, multiple clients and multiple request packets exist in the claims 1 and 16. It is not clear which client and request packet is referred by these limitations.

5.   Claims 7, 22, recite the limitations, "said request packet". There is insufficient antecedent basis for this limitation in the claim. Due to amendment to the claims, multiple request packets exist in the claims 1 and 16. It is not clear which request packet is referred by these limitations.

6.   Claims 8, 9, 23, 24, recite the limitations, "said client". There is insufficient antecedent basis for this limitation in the claim. Due to amendment to the claims, multiple clients exist in the claims 1 and 16. It is not clear which client is referred by these limitations.

Claim Rejections - 35 USC § 103

7.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8.   Claims 1-4, 7, 8, 13, 16-19, 22, 23 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zisapel et al., US Publication, 2002/0103846 A1, Aug. 1, 2002, "Load Balancing", Radware Limited (Hereinafter Zisapel-Radware) in view of Hassett et al., 6173;311, PointCast Inc (Hereinafter Hasett-PointCast).

9.   As per claims 1 and 16, Zisapel-Radware clearly teaches a process and an apparatus (e.g.,

figure 1C, abstract) to implement the following:

routing packets through a load balancing array of servers across a network in a computer

environment (e.g., router balancing load among cluster of servers over the network, figures 1A –

1C, paragraph 33, page 3),

providing a plurality of load balancing servers (e.g., load balancing servers, figures 1A –

1C, paragraph 33, page 3);

providing at least one back end Web server (e.g., content servers, S1, Sn, figures 1A –

1C, paragraph 33, page 3);

wherein one of said load balancing servers is also a scheduler (e.g., LB1 load balancing

server also scheduling client requests, figures 1A – 1C, paragraph 33, page 3);

wherein a request packet from a client is routed through said scheduler destined <u>for</u> the

load balancing array (e.g., LB1 load balancing server also scheduling client requests for LB2

load balancing server, figures 1A – 1C, paragraphs 33 and 34, page 3);

wherein said scheduler routes and load balances a request packet to a load balancing

server (e.g., LB1 load balancing server also scheduling client requests for LB2 load balancing

server, figures 1A – 1C, paragraph 33, page 3);

wherein said load balancing server routes and load balances said request packet to a back

end Web server (e.g., LB2 load balancing server balancing load among content servers, S1, Sn,

figures 1A – 1C, paragraph 33, page 3);

wherein said back end Web server's response packet to said request packet is sent to said

load balancing server (e.g., S1, Sn, content servers supporting client requests through LB2 load

balancing server, paragraphs 8-10, page1); and

wherein said load balancing server sends said response packet directly to said client (e.g.,

LB2 load balancing server forwarding response from content servers, S1, Sn, to the clients,

paragraphs 8-10, page1).

Zisapel-Radware also teaches handling of multiple requests for a client (e.g., paragraph

36, page 3).

However, Zisapel-Radware does not specifically mention about a request containing

multiple packets and a scheduler supporting multiple clients.

Hasett-PointCast clearly teaches a request containing multiple packets (e.g., abstract, col.,

7, lines 5 – 40, col., 3, lines 34 – 65) and a scheduler supporting multiple clients (e.g., abstract,

col., 7, lines 5 – 40, col., 3, lines 34 – 65).

It would have been obvious to one of ordinary skill in the art at the time the invention

was made to combine the teachings of Zisapel-Radware with Hasett-PointCast in order to

facilitate the scheduler to support multiple clients because the requests from the multiple clients

would be processed by the scheduler. A request having multiple packets would help the request

communicated from a client to the scheduler. The scheduler would receive requests from the

clients and would forward the requests so that the requests from the clients are properly handled.

10.   As per claims 2 and 17, Zisapel-Radware et al. teaches the following:

scheduler routes and load balances client requests to itself (e.g., LB1 load balancing

server scheduling client requests for itself, figures 1A – 1C, paragraph 33, page 3).

11.   As per claims 3 and 18, Zisapel-Radware does not specifically mention about the use of

detecting the failure of the server and electing one of said load balancing servers as the new

server. "Official Notice" is taken that both the concept and advantages of providing to detect the

failure of the server and electing one of said load balancing servers as the new server is well

known and expected in the art.

It would have been obvious to one of ordinary skill in the art at the time the invention

was made to include detecting the failure of the server and electing one of said load balancing

servers as the new server with the teachings of Zisapel-Radware in order to facilitate replacing of

scheduler in an event of the scheduler failure because upon failure of the scheduler, another load

balancing server can take over scheduling task to assign servers for the client requests. The

another load balancing server will then receive the client requests and will process them, i.e.,

schedule them according to the scheduling algorithm.

12.   As per claims 4 and 19, Zisapel-Radware does not specifically mention about the use of

server detecting the failure of other load balancing servers and the server stops routing packets to

any failed load balancing servers. "Official Notice" is taken that both the concept and

advantages of providing server detecting the failure of other load balancing servers and the

server stops routing packets to any failed load balancing servers, is well known and expected in

the art.

It would have been obvious to one of ordinary skill in the art at the time the invention

was made to include server detecting the failure of other load balancing servers and the server

stops routing packets to any failed load balancing servers, with the teachings of Zisapel-Radware

in order to facilitate assigning client requests to another load balancing server instead of the

failed load balancing server because stopping to route packets to the failed load balancing server

would prevent dropping packets. Rerouting to the packets to the other load balancing server will

help process the client requests.

13.   As per claims 7, 8, 22 and 23, Zisapel-Radware does not specifically mention about the

use of server decrypting and encrypting packet for an SSL session. "Official Notice" is taken

that both the concept and advantages of providing server decrypting and encrypting packet for an

SSL session, is well known and expected in the art.

It would have been obvious to one of ordinary skill in the art at the time the invention

was made to include server decrypting and encrypting packet for an SSL session, with the

teachings of Zisapel-Radware in order to facilitate secure communicating between the client and

the Web server because for processing and forwarding the packet to the Web server, the load

balancing server will decrypt the packet when it receives from the client. The load balancing

server will receive the response packet from the Web server, and it will encrypt the response

packet before sending to the client. Using well-known SSL session implementation, the web

server and the client will have direct secure communication.

14.   As per claims 13 and 28, Zisapel-Radware does not specifically mention about the use of

detecting and stop routing request packets to failed back end Web servers. "Official Notice" is

taken that both the concept and advantages of providing detecting and stop routing request

packets to failed back end Web servers is well known and expected in the art.

It would have been obvious to one of ordinary skill in the art at the time the invention

was made to include detecting and stop routing request packets to failed back end Web servers

with the teachings of Zisapel-Radware in order to facilitate accessing the other web server in an

event of the web server failure because upon failure of the web server, other web server would

help support the client requests. By stopping to route the packets to the failed web server would

help prevent packets from dropping and the other web server would then handle the client

requests.

15.   Claims 5, 6, 9-12, 14, 15, 20, 21, 24-27, 29, 30, are rejected under 35 U.S.C. 103(a) as

being unpatentable over Zisapel-Radware and Hasett-PointCast in view of Masters 6,374,300

(Hereinafter Masters).

16.   As per claims 5, 6, 14, 15, 20, 21, 29, 30, Zisapel-Radware and Hasett-PointCast do not

specifically mention about the server scheduling sessions to servers based on a cookie or session

ID and use of cookie injection to map a client to a specific server.

Masters clearly teaches about the concept of server scheduling sessions to servers based

on a cookie or session ID (e.g., abstract, col., 10, lines 8 - 61), and use of cookie injection to map

a client to a specific server (e.g., abstract, col., 10, lines 8 - 61, col., 13, lines 1- 24), modify

URLs in the HTML page in a packet to serve them from said content delivery network (e.g., col.,

5, lines14 – 61, col., 3, lines 21 - 50), HTML pages that have modified URLs are cached to

improve performance (e.g., abstract, col., 10, lines 8 - 61, col., 2, lines 24 – page 4, line 34, col.,

7, lines 1 - 16).

It would have been obvious to one of ordinary skill in the art at the time the invention

was made to combine the teachings of Zisapel-Radware and Hasett-PointCast with Masters in

order to facilitate scheduling based on cookie for persistent connection with the web server

because using the cookie the client request can be routed to a previously selected destination web

server associated with the client. The client will be able to continue using the same web server

support. As per Masters teachings, the cookie information can be manipulated as necessary.

Hence, the client will be able to continue communicating with the server in a direct persistent

manner.

17.   As per claims 9-12, 24-27, Zisapel-Radware and Hasett-PointCast teach limitations

rejected under claims 1 and 16. Zisapel-Radware also mentions about load balancing server

establishes a connection with said client. However, Zisapel-Radware and Hasett-PointCast do

not specifically mention about the client keeping connection alive with the server. "Official

Notice" is taken that both the concept and advantages of the client keeping connection alive with

server, is well known and expected in the art.

It would have been obvious to one of ordinary skill in the art at the time the invention

was made to include the client keeping connection alive with the server, with the teachings of

Zisapel-Radware and Hasett-PointCast in order to facilitate secure communicating between the

client and the Web server because using well-known SSL session implementation, the web

server and the client will have direct secure communication as long as the connection between

the web server and the client is alive.

Zisapel-Radware and Hasett-PointCast do not specifically mention about URL based

scheduling of packets and the load balancing server performing hash scheduling of packets.

Masters teaches about URL based scheduling of packets (e.g., col., 5, lines 18 – 65), persistent

connections in all its paths when required (e.g., col., 5, lines 22 – 59, col., 6, lines 8 - 31) and the

load balancing server performing hash scheduling of packets (e.g., col., 15, lines 45 – col., 16,

lines 21) and uses hash group based persistence to maintain its persistence tables (e.g., col., 5,

lines 22 – 59, col., 15, line 57 – col., 16, line 24).

It would have been obvious to one of ordinary skill in the art at the time the invention

was made to combine the teachings of Zisapel-Radware and Hasett-PointCast with Masters in

order to facilitate secure communicating between the client and the Web server because the URL

information in the https packet would provide information of the resource, which the client needs

to access. The scheduling with hashing of packets will provide direct secure communication

between the web server and the client.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing

date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Haresh Patel whose telephone number is (571) 272-3973. The

examiner can normally be reached on Monday, Tuesday, Thursday and Friday from 10:00 am to

8:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, John Follansbee can be reached on (571) 272-3964. The fax phone number for the

organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Haresh Patel

February 7, 2005

JOHN FOLLANSBEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100